ARB's Forest Sector Greenhouse Gas Inventory

- **Overview**
- **Current Methods**
- **Future Direction**

Photo credit: Marc Vayssières

ARB Greenhouse Gas Inventory Overview

- Key legislation: AB1803 & AB32

- Accounts for emissions from all major economic sectors in the state

- Serves multiple purposes for AB 32

  http://www.arb.ca.gov/cc/inventory/inventory.htm

Current Forest Sector Inventory

- Unique among greenhouse gas sectors
    - CO_2 uptake and emission (also CH_4, N_2O)
    - Estimates the net CO_2 exchange to and from the atmosphere

- Based on 2004 Winrock Study
    - 1994-2000 time period
    - Stock change used for CO_2 estimation
    - Extrapolated to other years for forests and rangelands statewide

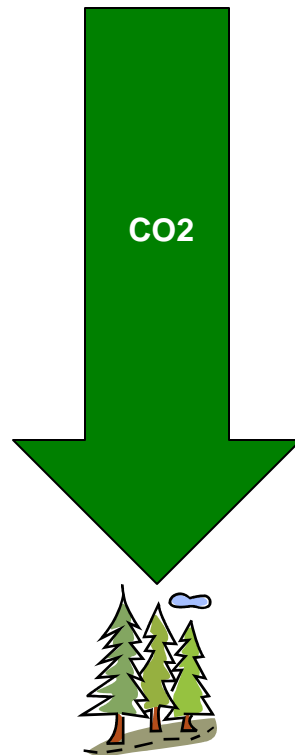- Uses CIWMB data and ARB method to determine CO_2 emissions from wood waste in landfills
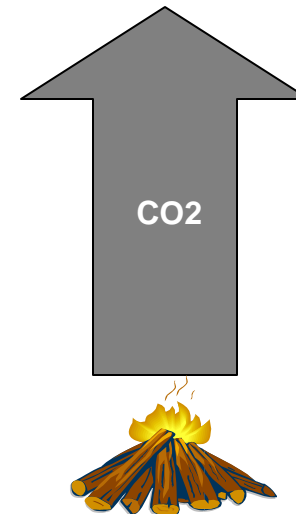
Atmosphere

CO2 Removal (sequestration)

- vegetative growth in forests, range and other lands

CO2

CO2 Emissions

- wildland fire, land conversion, other disturbances

- harvest slash, combustion, decomposition

- mill waste combustion

- landfilled wood waste decomposition, landfill gas combustion (wood products portion)

- composted wood waste decomposition

CO2

Land

Forest Sector Inventory Limitations

- Land component limitations

  - Based on a one-time study (not repeated)

  - Data (spatial and temporal restrictions)

  - Methods (canopy cover: novel stock change)

  - Comprehensiveness (soils, urban forests)

  - Extrapolation in space and time

- Wood product decomposition emissions

  - CA forest origin vs. imported

Potential Improvements

- Refine CO2, other GHG emissions/uptake
- Forest carbon stock estimates
- Fire emissions
- Land conversion
- Other disturbance (disease/pest, etc.)
- Forest soil carbon
- Wood products (CA origin, imports)
- Urban forests
- Projections

Future Forest Inventory Development Objectives

- IPCC guidance

- Best available data sets

- Annual updates

- Statewide coverage

- Transparent and reproducible

- Uncertainty estimates

- Finer spatial resolution of emissions/uptake where appropriate

- Forecasting capability